Serial No.: 09/620,474

AMENDMENT TO THE CLAIMS

1-6. (Canceled)

7. (Currently amended) A method of designing an interface for connection between a control function part of a semiconductor integrated circuit and plural applications by using a database storing plural libraries corresponding to operation models of said plural applications, comprising a step of:

analyzing a number of collisions of bus transaction through operation simulation where said applications are ~~limitlessly~~ operated by said control function part by successively using each of said plural libraries as the operation model of each of said plural applications.

8. (Original) The method of designing an interface of Claim 7, further comprising a step of generating FIFOs in a number of stages according to the number of collisions of bus transaction,

wherein the number of collisions of bus transaction is analyzed with the FIFOs virtually inserted between said applications.

9. (Currently amended) A method of designing an interface for connection between a control function part of a semiconductor integrated circuit and plural applications by using a database storing plural libraries corresponding to operation models of said plural applications, comprising a step of:

2

Serial No.: 09/620,474

analyzing a number of concurrent instruction processing through operation

simulation where said applications are ~~limitlessly~~ operated by said control function part

by successively using each of said plural libraries as the operation model of each of said

plural applications.

10. (Original) The method of designing an interface of Claim 9,

wherein a structure of a cross bar bus is determined in accordance with the

number of concurrent instruction processing.

11. (Currently amended) The method of designing an interface of Claim 10, further

comprising ~~a step of~~ the steps of:

determining a portion where the number of concurrent instruction processing is

larger than a predetermined value; and

generating a DMA and/or at least one cross bar bus ~~transfer operation control~~

~~function part~~ to be disposed in a bus where the number of concurrent instruction

processing is larger than ~~a~~ the predetermined value,

wherein the number of concurrent instruction processing is analyzed with the

~~transfer operation control function part~~ DMA and/or at least one cross bar bus disposed in

the bus.

12. (Original) A method of designing an interface for connection between a control

function part of a semiconductor integrated circuit and plural applications by using a

3

Serial No.: 09/620,474

database storing plural libraries corresponding to operation models of said plural

applications and plural bus structures, comprising the steps of:

(a) setting plural main parameters for ultimately evaluating said semiconductor

integrated circuit and setting plural sub-parameters affecting each of said main

parameters;

(b) selecting library groups where said main parameters meet target values by

evaluating each of said main parameters on the basis of said sub-parameters of each of

said libraries; and

(c) determining an interface by selecting an optimal library group by evaluating

plural main parameters determined with respect to each of said selected library groups.

13. (Original) The method of designing an interface of Claim 12, further comprising,

before the step (a), a step of analyzing said sub-parameters of each of said libraries

through operation simulation conducted by successively using each of said plural

libraries as an operation model of each of said plural applications.

14. (Original) The method of designing an interface of Claim 12,

wherein, in the step (a), three main parameters are set and three sub-parameters

are set with respect to each of said three main parameters;

in the step (b), a three-dimensional coordinate system having said three sub-

parameters as coordinate axes is built for selecting a library group where an area of a

triangle determined according to values of said sub-parameters is smaller than a target

value; and

4

Serial No.: 09/620,474

in the step (c), a three-dimensional coordinate system having said three main

parameters as coordinate axes is built for determining said interface based on a library

group where an area of a triangle determined according to values of said main parameters

obtained from said selected library groups is minimum.

15. (Original) The method of designing an interface of Claim 12, further comprising,

after the step (a) and before the step (b), a step of selecting a library group where a

specific sub-parameter noticed among said plural sub-parameters meets a target value,

wherein, in the step (b), a library group where main parameters excluding a

specific parameter among said plural main parameters meet target values is selected, and

in the step (c), a library group where said specific main parameter is minimum is

selected as said optimal library group.

16. (Original) The method of designing an interface of Claim 12,

wherein, in the step (a), affecting coefficients of said plural sub-parameters

affecting said main parameters are respectively set,

in the step (b), a library group where said main parameters meet target values is

selected on the basis of said affecting coefficients and values of said sub-parameters; and

in the step (b), plural main parameters obtained from said selected library groups

are weighted before selecting said library group where said main parameters meet the

target values.

Serial No.: 09/620,474

17. (Currently amended) A method of designing an interface for connection between a control function part of a semiconductor integrated circuit and plural applications by using a database storing plural libraries corresponding to operation models of said plural applications and plural bus structures, comprising the steps of:

(a) successively selecting each of said plural libraries as the operation model of each of said plural applications;

(b) operating said plural applications by said control function part, ~~whereby~~ and analyzing performances of said control function part, an interface and said applications attained by using each of said libraries;

(c) repeatedly conducting the steps (a) and (b), whereby determining an interface by selecting an optimal library group on the basis of results of the analysis; and

(d) synthesizing an optimal interface on the basis of said determined parameters.

18. (Currently amended) The method of designing an interface of Claim 17,

wherein, in the step (b), a number of collisions of bus transaction occurring by ~~limitlessly~~ operating said applications without any management by said control function part is analyzed with respect to each of said libraries, and

in the step (d), FIFOs in a number of stages according to the number of collisions of bus transaction are inserted between said applications.

19. (Currently amended) The method of designing an interface of Claim 17,

wherein, in the step (b), a number of concurrent instruction processing occurring by ~~limitlessly~~ operating said applications without any management by said control

6

Serial No.: 09/620,474

function part is analyzed with respect to each of said libraries, and <u>a portion where the</u>
<u>number of concurrent instruction processing is larger than a predetermined value is</u>
<u>determined, and</u>

in the step (d), a cross bar bus is disposed in a bus where the number of
concurrent instruction processing is larger than a <u>the predetermined</u> value.

20. (New) A method of designing an interface of an LSI including a bus structure, said
LSI executes plural applications, the method comprising the steps of:

creating plural libraries, each library contains information of one specified
application of the plural applications and one specified bus structure of said LSI;

analyzing a performance of the bus structure through operation simulation for at
least one of said plural libraries, where said specified application is operated for said
specified bus structure; and

determining a bus structure of said LSI in view of the result of said analyzing step.

21. (New) The method of designing an interface of Claim 20,

wherein said result of said analyzing step includes a number of collisions of bus
transaction occurring.

7

Serial No.: 09/620,474

22. (New) The method of designing an interface of Claim 21,

wherein said determining step includes inserting FIFOs in a number of stages

according to the number of collisions of bus transaction.

23. (New) The method of designing an interface of Claim 7, wherein the operation

simulation is performed without any management.

24. (New) The method of designing an interface of Claim 9, wherein the operation

simulation is performed without any management.

25. (New) The method of designing an interface of Claim 13, wherein the operation

simulation is performed without any management.

26. (New) The method of designing an interface of Claim 17, wherein the step (b) of

operating said plural applications is performed without any management.

27. (New) The method of designing an interface of Claim 21, wherein the operation

simulation is performed without any management.